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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/932,128	08/16/2001	Juan Ygucrabide	11032-021	5342

7590 04/19/2005
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EXAMINER

YANG, NELSON C

ART UNIT PAPER NUMBER

1641

DATE MAILED: 04/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/932,128

Applicant(s)

YGUERABIDE ET AL.

Examiner

Nelson Yang

Art Unit

1641

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 49-52, 55, 60-63, 66, 68, 71-73, 80, 84, 88 and 166-181 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 49-52, 55, 60-63, 66, 68, 71-73, 80, 84, 88 and 166-181 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Applicant's amendment of claims 49, 50, 60, 84, 167, 168, 173-181 is acknowledged and has been entered.
2. Applicant's cancellation of claims 182-216 is acknowledged and has been entered.
3. Claims 49-52, 55, 60-63, 66, 68, 71-73, 76, 80, 84, 88, 166-181 are currently pending.

Rejections Withdrawn

4. Applicant's arguments, see pgs. 10-14, filed January 26, 2005, with respect to the rejections under 35 U.S.C. 112, second paragraph, have been fully considered and are persuasive. The rejection of claims 49-52, 55, 60-63, 66, 68, 71-73, 80, 84, 88, and 166-181 under 35 U.S.C. 112, second paragraph, has been withdrawn.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

6. Claims 49-52, 55, 61-63, 66, 68, 76, 80, 84, 166, 168, 173, 176-179 are rejected under 35 U.S.C. 102(b) as being anticipated by Mroczkowski et al [US 5,137,827].

With respect to claims 49, 55, 63, 66, 173, Mroczkowski et al teach particles made from an electrically conductive metal such as gold or silver or plastic particles with a conductive metal

Art Unit: 1641

coating such as gold (column 9, lines 15-25) with diameters of 0.01-500 microns (column 9, lines 10-15). Mrockowski et al further teach that the particles comprise an additional material such as antibodies (column 9, lines 1-5).

The limitation that “when each said population is on a surface at a particle density of less than 0.1 particles per μm^2 and illuminated by white light, the color of scattered light scattered by at least 90% of said particles of each said population is indistinguishable to the human eye when viewed with less than 500 times magnification and without electronic amplification” is considered to be a functional limitation resulting from the intended use of illuminating the population when the population is arranged at a particle density of less than 0.1 particles per μm^2 on a surface. Since applicant has not recited any structural requirements of the particles other than that they contain gold, and have a diameter of 1 to 500 nm inclusive, the prior art would read upon the claim.

7. With respect to claims 50-52, 68, 166, 168, 176-179, Mrockowski et al further teach that the particles comprise an additional material such as antibodies (which are polymers of amino acids) (column 9, lines 1-5), and have diameters of 0.01-500 microns (column 9, lines 10-15). Although Mrockowski et al do not specifically recite that the material does not significantly interact with light in the visible region of the spectrum, a person of ordinary skill in the art would have known that materials such as protein would not significantly interact with light in the visible region of the spectrum, as is evidenced by applicant's claims.

8. With respect to claims 61, 62, Mrockowski et al further teach a metal overcoating comprising a material such as silver or gold, (column 11, lines 31-40).

Art Unit: 1641

9. With respect to claims 76, 80, 84, Mroczkowski et al teach particles made from an electrically conductive metal such as gold or silver or plastic particles with a conductive metal coating such as gold (column 9, lines 15-25) with diameters of 0.01-500 microns (column 9, lines 10-15).

10. Claims 49-52, 55, 60, 63, 66, 68, 71-73, 76, 80, 84, 88, 166, 168-173, 176-179, are rejected under 35 U.S.C. 102(b) as being anticipated by Rembaum et al [US 4,929,400].

With respect to claims 49, 176-179, Rembaum et al teach microspheres created from polymers, proteins, waxes, starches, glasses and metals (column 3, lines 40-45), and further comprising materials such as silver, gold, and polyHEMA and having precise size range with diameters below 1000 Angstroms (column 8, lines 41-54, lines 55-69), varying no more than plus or minus 5% (column 3, lines 65-68).

11. The limitation that “when each said population is on a surface at a particle density of less than 0.1 particles per μm^2 and illuminated by white light, the color of scattered light scattered by at least 90% of said particles of each said population is indistinguishable to the human eye when viewed with less than 500 times magnification and without electronic amplification” is considered to be a functional limitation resulting from the intended use of illuminating the population when the population is arranged at a particle density of less than 0.1 particles per μm^2 on a surface. Since applicant has not recited any structural requirements of the particles other than that they contain gold, and have a diameter of 1 to 500 nm inclusive, the prior art would read upon the claim.

12. With respect to claims 50-52, 169-171, Rembaum et al teach microspheres created from polymers, proteins, waxes, starches, glasses and metals (column 3, lines 40-45). Although

Art Unit: 1641

Rembaum et al do not specifically recite that the material does not significantly interact with light in the visible region of the spectrum, a person of ordinary skill in the art would have known that materials such as protein would not significantly interact with light in the visible region of the spectrum.

13. With respect to claims 55, Rembaum et al teach microspheres (column 3, lines 40-45) that are spheroid in shape (column 3, lines 60-63).

14. With respect to claims 60, 88, Rembaum et al teach microspheres (column 3, lines 40-45) varying no more than plus or minus 5% (column 3, lines 65-68).

15. With respect to claims 63, 66, 68, 173, Rembaum et al teach microspheres created from polymers, proteins, waxes, starches, glasses and metals (column 3, lines 40-45), and further comprising materials such as silver, gold, and polyHEMA and having precise size range with diameters below 1000 Angstroms (column 8, lines 41-54, lines 55-69).

16. With respect to claims 71-73, magnetic fillers can be incorporated into the particles used to form the microspheres (column 3, lines 45-50).

17. With respect to claims 76, 80, 84, 176-179, Rembaum et al teach microspheres created from polymers, proteins, waxes, starches, glasses and metals (column 3, lines 40-45), and further comprising materials such as silver, gold, and polyHEMA and having precise size range with diameters below 1000 Angstroms (column 8, lines 41-54, lines 55-69).

18. With respect to claims 166, 168, 172, the microsphere particles can contain covalent functional groups on the surface capable of further reaction with and attachment to other materials such as fluorescent dyes, antibodies or other proteins (column 3, lines 50-57).

Art Unit: 1641

19. Claims 49-52, 55, 61-63, 66, 68, 71-73, 76, 80, 84, 166-173, 176-179 are rejected under 35 U.S.C. 102(b) as being anticipated by Margel [US 4,624,923].

With respect to claims 49, 166, 176-179 Margel teaches populations of polyaldehyde microspheres coated with silver or gold (column 2, lines 15-30), where the sizes of the populations include 0.4 μ , 0.1 μ , 0.05 μ diameters (column 11-13, examples 8-25), and further comprising a drug, antibody, antigen, enzyme or other protein (claim 7).

20. With respect to claims 50-52, 166-172 Margel teaches that the microspheres further comprise a drug, antibody, antigen, enzyme or other protein (claim 7). Although Margel does not specifically recite that the material is a base material or does not significantly interact with light in the visible region of the spectrum, a person of ordinary skill in the art would have known that materials such as protein would be base materials and would not significantly interact with light in the visible region of the spectrum, as is evidenced by applicant's claims.

21. With respect to claim 55, Margel teaches populations of polyaldehyde microspheres (column 2, lines 15-30), which would be spherical.

22. With respect to claims 61-63, 66, 68, Margel teaches populations of polyaldehyde microspheres coated with silver or gold (column 2, lines 15-30).

23. With respect to claim 71-73, the microspheres may be magnetic (column 2, lines 23-25).

24. With respect to claims 76, 80, 84, 173, Margel teach polyaldehyde microspheres coated with silver or gold (column 2, lines 15-30), where the sizes of the populations include 0.4 μ , 0.1 μ , 0.05 μ diameters (column 11-13, examples 8-25).

25. Claims 49-52, 55, 62, 63, 66, 68, 76, 80, 84, 166-173, 176-181, are rejected under 35 U.S.C. 102(e) as being anticipated by Tarcha [US 5,567,628].

Art Unit: 1641

With respect to claims 49, 55, 62, 84, Tarcha et al teach gold colloids with diameters 50-60 nm (column 19, lines 33-47) and further comprising antibodies (column 23, lines 20-45) and polymer enhancers (column 9, lines 18-26), and can also comprise silver coatings (column 17-18, example 5).

26. With respect to claims 50-52, 68, 166-172, Tarcha et al teach that the colloids may be labeled with anti-biotin antibodies (column 23, lines 20-45).

27. With respect to claim 63, 66, 76, 80, 173, Tarcha et al teach gold colloids with diameters 50-60 nm (column 19, lines 33-47) and silver colloids with diameters ranging from 20 to 80 nm (column 16, lines 50-60).

28. With respect to claims 176-181, Tarcha et al teach that the colloids may be labeled with anti-biotin antibodies (column 23, lines 20-45), and have diameters from 20 to 80 nm (column 16, lines 50-60).

Claim Rejections - 35 USC § 103

29. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

30. Claims 60, 88, 174, 175, are rejected under 35 U.S.C. 103(a) as being unpatentable over Mroczkowski et al [US 5,137,827].

With respect to claims 60, 88, 182-184, 196-198, 201, 202, 205-208, 212-214, Mroczkowski et al teach particles made from an electrically conductive metal such as gold or silver or plastic particles with a conductive metal coating such as gold (column 9, lines 15-25)

Art Unit: 1641

with diameters of 0.01-500 microns. Mrockowski et al further teach that the particles comprise an additional material such as antibodies (column 9, lines 1-5).

Mrockowski et al fail to disclose the limitation that the population of microspheres is characterized by a coefficient of variation of less than 5%. It would, however, have been obvious to one having ordinary skill in the art at the time the invention was made to have a coefficient of variation of less than 5%, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Therefore, it would have been obvious in the method in the invention of Mrockowski et al for the population of particles to be characterized by a coefficient of variation of less than 5%, through normal optimization procedures in the art.

31. With respect to claims 174, 175, Mrockowski et al fail to disclose the limitation of the thickness of the coatings being 0.5, 0.8, 1.5, 2, 4, 5, 6, 10, 12, or 20 nm. It would have been obvious to one having ordinary skill in the art at the time the invention was made for the thickness of the coatings being 0.5, 1.5, 2, 4, 5, 6, 10, 12, or 20 nm, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Therefore, it would have been obvious in the method in the invention of Mrockowski et al for the conductive metal coating to be 0.5, 1.5, 2, 4, 5, 6, 10, 12, or 20 nm, through normal optimization techniques known in the art.

Art Unit: 1641

32. Claims 60, 88, 174, 175, rejected under 35 U.S.C. 103(a) as being unpatentable over Margel [US 4,624,923].

With respect to claims 60, 88, Margel teaches populations of polyaldehyde microspheres coated with silver or gold (column 2, lines 15-30), comprising beads with diameters between .01 μ and 100 μ (column 4, examples 25-30), and further comprising a drug, antibody, antigen, enzyme or other protein (claim 7).

Margel fails to disclose the limitation that the population of microspheres is characterized by a coefficient of variation of less than 5%. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a coefficient of variation of less than 5%, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

33. Therefore, it would have been obvious in the method in the invention of Margel for the population of particles to be characterized by a coefficient of variation of less than 5%, through normal optimization procedures in the art.

34. With respect to claims 174, 175, Margel fails to disclose the limitation of the thickness of the coatings being about 0.5, 0.8, 1.5, 2, 4, 5, 6, 10, 12, or 20 nm. It would have been obvious to one having ordinary skill in the art at the time the invention was made for the thickness of the coatings being about 0.5, 1.5, 2, 4, 5, 6, 10, 12, or 20 nm, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Therefore, it would have been obvious in the method in the invention of Margel for the conductive metal coating to be 0.5, 1.5, 2, 4, 5, 6, 10, 12, or 20 nm, through normal optimization techniques known in the art.

35. Claim 181 is rejected under 35 U.S.C. 103(a) as being unpatentable over Margel [US 4,624,934] in view of Tarcha et al [US 5,567,628].

Margel discloses populations of polyaldehyde microspheres coated with silver or gold and further comprising antibodies. Margel fails to teach that the antibodies are anti-biotin, anti-fluorescein or anti-digoxinin antibodies.

Tarcha et al, however teach the use of anti-biotin antibodies as a means for attaching biotinylated antibodies (column 23, lines 20-45).

Therefore it would have been obvious in the invention of Margel to have microspheres comprising anti-biotin antibodies, as suggested by Tarcha et al, in order to attach biotinylated antibodies.

36. Claims 60, 88, are rejected under 35 U.S.C. 103(a) as being unpatentable over Tarcha [US 5,567,628].

With respect to claims 60, 88, Tarcha et al teach silver colloids with diameters 20-80 nm (column 16, lines 50-60) and further comprising antibodies (column 23, lines 20-45) and polymer enhancers (column 9, lines 18-26) and stabilizers (column 10, lines 22-25).

Tarcha et al fail to disclose the limitation that the population of microspheres is characterized by a coefficient of variation of less than 5%. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a coefficient of

variation of less than 5%, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Therefore, it would have been obvious in the method in the invention of Tarcha et al for the population of particles to be characterized by a coefficient of variation of less than 5%, through normal optimization procedures in the art.

Response to Arguments

37. Applicant's arguments filed January 26, 2005 have been fully considered but they are not persuasive.

In response to applicant's argument that the prior art does not teach the limitation that the color of light scattered by at least 90% of said particles of each said population upon illumination of each said population on a surface at a particle density of less than 0.1 particles per μm^2 with white light is indistinguishable to the human eye when viewed with less than 500 times magnification and without electronic amplification, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 370 F.2d 576, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 312 F.2d 937, 939, 136 USPQ 458, 459 (CCPA 1963).

In particular, applicant's have merely recited that the intended use of illuminating said population when said population is placed on a surface at a particle density of less than 0.1

Art Unit: 1641

particles per μm^2 would result in the functional limitation that the color of light scattered by at least 90% of said particles is indistinguishable to the human eye when viewed with less than 500 times magnification and without electronic amplification. However, it is believed the populations of particles taught in the prior art would also be capable of fulfilling the limitation that the color of light scattered by at least 90% of said particles is indistinguishable to the human eye when viewed with less than 500 times magnification and without electronic amplification when they are located on a surface at a particle density of less than 0.1 particles per μm^2 when illuminated with white light.

Conclusion

38. No claims are allowed.

39. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

40. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


Art Unit: 1641

41. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson Yang whose telephone number is (571) 272-0826. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long V. Le can be reached on (571)272-0823. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

42. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nelson Yang
Patent Examiner
Art Unit 1641


LONG V. LE
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04/15/05